Green Retrofits for Schools
via Rain Gardens

5th National Nonpoint Source and Stormwater Outreach Conference
May 14, 2009

Karen Fuss, Coordinator of CWSEC
Waccamaw Watershed Academy,
Center for Marine & Wetland Studies, Coastal Carolina University

Coastal Waccamaw Stormwater Education Consortium

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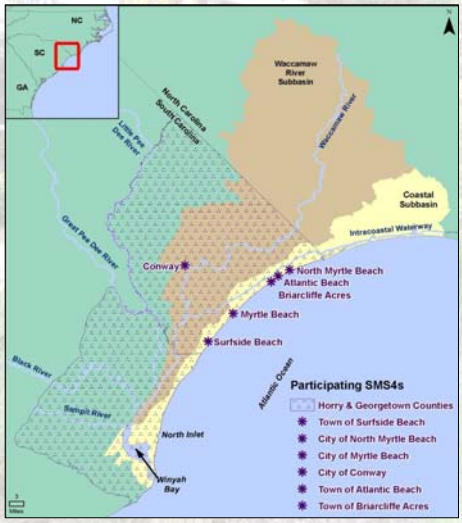
Goal

Develop and implement effective, outcomes-based stormwater education and outreach programs to meet federal requirements and satisfy local environmental and economic needs.

Participating Communities



These municipalities encompass over 2,000 square miles of land with approximately 300,000 residents.

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Education Providers

Coastal Carolina University's Waccamaw Watershed Academy

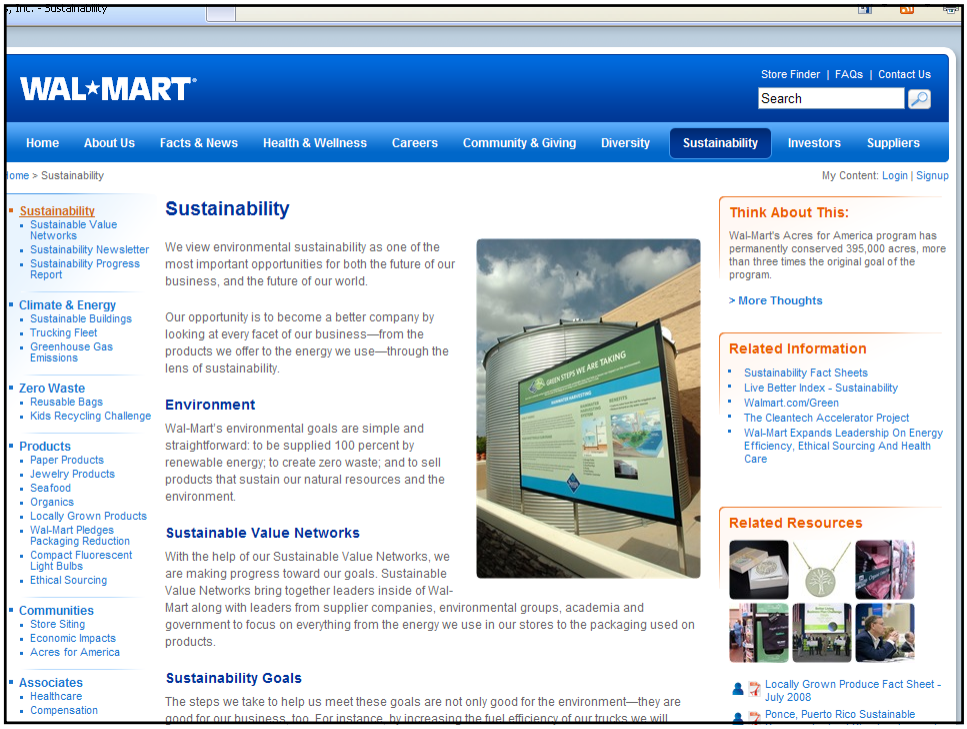
North Inlet-Winyah Bay National Estuarine Research Reserve Coastal Training and Public Education Program

Clemson University's Carolina Clear Program

SC Sea Grant Extension Program

Waccamaw Riverkeeper®

Murrells Inlet 2020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Trucking Fleet
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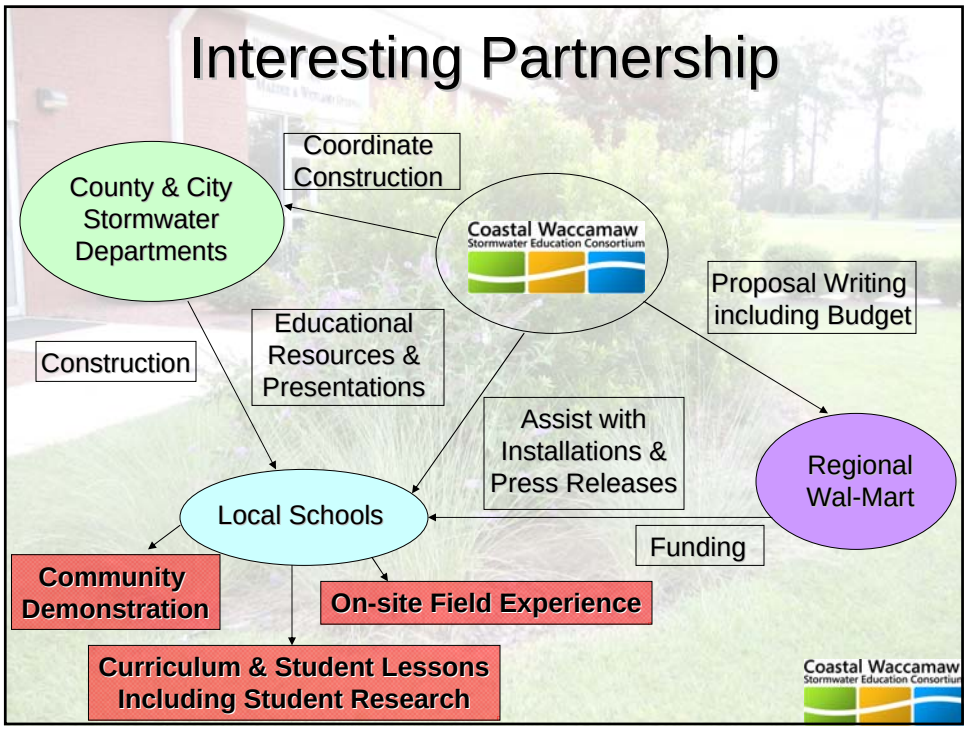
Zero Waste
Reusable Bags
Kids Recycling Challenge
Products
Paper Products
Jewelry Products
Seafood
Organics
Locally Grown Products
Wal-Mart Pledges Packaging Reduction
Compact Fluorescent Light Bulbs
Ethical Sourcing
Communities
Store Siting
Economic Impacts
Acres for America
Associates
Healthcare
Compensation
Sustainability
We view environmental sustainability as one of the most important opportunities for both the future of our business, and the future of our world.
Our opportunity is to become a better company by looking at every facet of our business—from the products we offer to the energy we use—through the lens of sustainability.
Environment
Wal-Mart's environmental goals are simple and straightforward: to be supplied 100 percent by renewable energy; to create zero waste; and to sell products that sustain our natural resources and the environment.
Sustainable Value Networks
With the help of our Sustainable Value Networks, we are making progress toward our goals. Sustainable Value Networks bring together leaders inside of Wal-Mart along with leaders from supplier companies, environmental groups, academia and government to focus on everything from the energy we use in our stores to the packaging used on products.
Sustainability Goals
The steps we take to help us meet these goals are not only good for the environment—they are good for our business, too. For instance, by increasing the fuel efficiency of our trucks we will
Think About This:
Wal-Mart's Acres for America program has permanently conserved 395,000 acres, more than three times the original goal of the program.
> More Thoughts
Related Information
Sustainability Fact Sheets
Live Better Index - Sustainability
Walmart.com/Green
The Cleantech Accelerator Project
Wal-Mart Expands Leadership On Energy Efficiency, Ethical Sourcing And Health Care
Related Resources
Locally Grown Produce Fact Sheet - July 2008
Ponce, Puerto Rico Sustainable


Interesting Partnership
County & City Stormwater Departments
Coordinate Construction
Coastal Waccamaw Stormwater Education Consortium
Proposal Writing including Budget
Construction
Educational Resources & Presentations
Assist with Installations & Press Releases
Regional Wal-Mart
Local Schools
Funding
Community Demonstration
On-site Field Experience
Curriculum & Student Lessons Including Student Research
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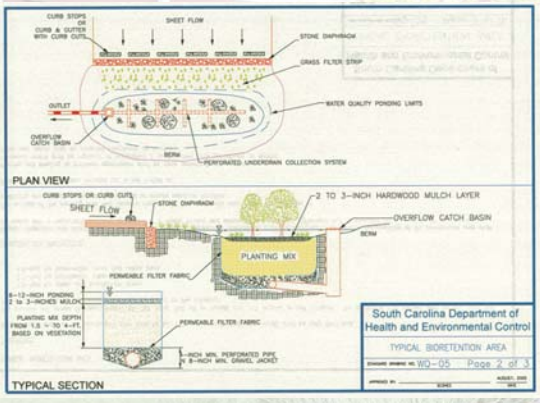
How to Build a Rain Garden



Rain Garden Materials:
- 50 – 60% Sand
- 20 – 30% Top Soil
- 20 – 30% Compost
- Check native soil first!
- Native plants
- Dense-material mulch

➢ In well-drained, sandy soils ~ 20% of the drainage area or impervious area (rooftops, driveways, etc.)

➢ In poorly drained, loamy soils, 20% to 60% of impervious area

Source: Dan Hitchcock, Clemson University

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The Final Product

Planting in June '06

1 Year Later – August '07

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Socastee High School Check Presentation on December 5, 2007

$14,000 from 5 Wal-Mart stores for stormwater Best Management Practices (BMPs)

- Infiltration swale & bioretention cell with under drain systems
- Sand, compost, native SC plants, mulch and sod
- Educational & research equipment

Also served as media event to introduce stormwater BMP concept

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Socastee High School BMP Installation on April 11, 2008

Bioretention cell to collect roof runoff

Infiltration swale to improve drainage of athletic fields

Media returned for action shots and story

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Burgess Elementary Installation
on October 22, 2008

$8,000 donated by 2 Wal-Mart stores

Garden to collect runoff from bus loading area

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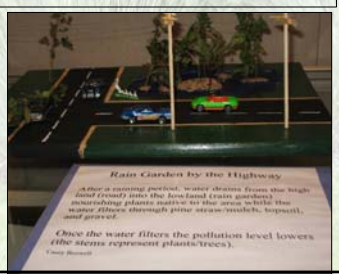
Curriculum Development by Burgess Elementary

Models of polluted runoff, rain gardens and good stormwater practices



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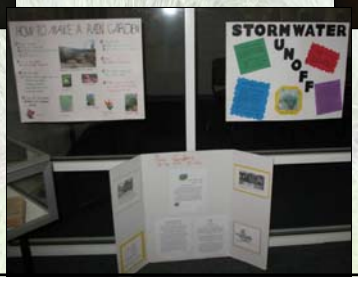
Follow-up Event
by Burgess Elementary Students

Brochures and posters of stormwater runoff and rain gardens and barrels

Displayed for parents and community



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Conway High Installation
on November 20, 2008

$8,600 donated by 2 Wal-Mart stores

Science and Horticulture classes participated

Cell designed to collect runoff from adjacent parking lot

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Georgetown High Installation on December 3, 2008

$5,000 donated by 1 Wal-Mart

Installed in 1 day – construction in a.m. and planting/mulching in p.m.

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Curriculum Development by Georgetown High

Making and painting rain barrels to be donated to other schools

Student Rain Garden Competition

Generously funded by Wal-Mart

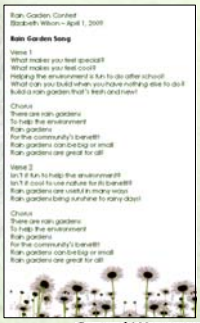
AIM: The competition is to have GHS students promote our rain garden in a fun and educational manner to fellow school district students and their community.

The ***three categories*** that students shall focus on to promote and explain the benefits of rain gardens are:

A song about rain gardens,

A sign providing a rain garden overview to be placed at the rain garden, and

A brochure, video, or commercial explaining how to make a rain garden at your home or in our community in general.



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Myrtle Beach Intermediate Installation on January 16, 2009

$4,500 donated from 1 store

First joint project by 2 stormwater departments

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Educational Activities & Equipment

- Monitoring

  Water Quality – colorimeter; portable pH/conductivity meter

  Rainfall/weather conditions - Davis Wireless Vantage Pro 2 Weather Station

- Habitat

  Bioassessment – magnifiers, insect nets

- Watersheds

  Land Uses & Effects – Enviroscape Model

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Curriculum Follow-Up

The drain is just for the rain!

- Install rain garden and/or rain barrels
- Plant shrubs and trees – vegetated buffers
- Storm drain stenciling
- River/beach sweeps
- Scoop the Poop! Campaign

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Partners Love Publicity!

Newspaper Coverage:
The Sun News, Georgetown Times, and Horry Independent

TV Coverage:
Local Networks including local CNN and Horry County Schools TV 12

Inside HCS

News 13

CarolinaLive.com
Grand Strand Pee Dee Border Belt
Powered By News Channel 15

WMBF NEWS.COM LIVE • LOCAL • LATE BREAKING
MYRTLE BEACH FLORENCE

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Lessons Learned

School	Funds	Lessons Learned
Socastee High	$14,000	Have check presentation & planting on same day
Burgess Elem.	$8,000	Elementary students love being involved
Conway High	$8,600	Needed design adjustments
Georgetown High	$5,000	Too much for one day
Myrtle Beach Intermediate	$4,500	Smaller funding requests better

Total Funding (12/07 – 1/09): $40,100

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Additional Funding Sources

- Captain Planet Foundation
- NSTA Toyota Tapestry Science Grants
- National Gardening Association (with Home Depot)
- Lowe's Outdoor Schoolyard Grant Program
- US Environmental Protection Agency
- Palmetto Pride

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For More Information

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